

Prior Art  
Figure 1

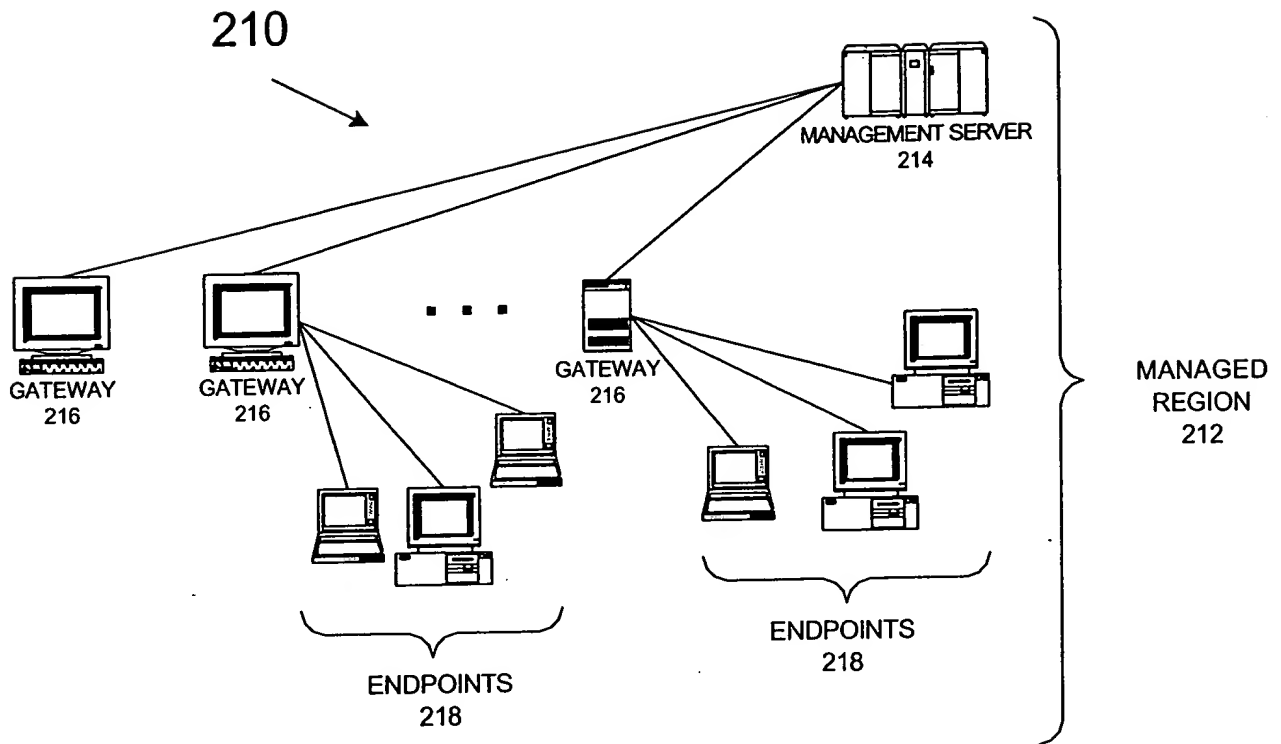


Figure 2A

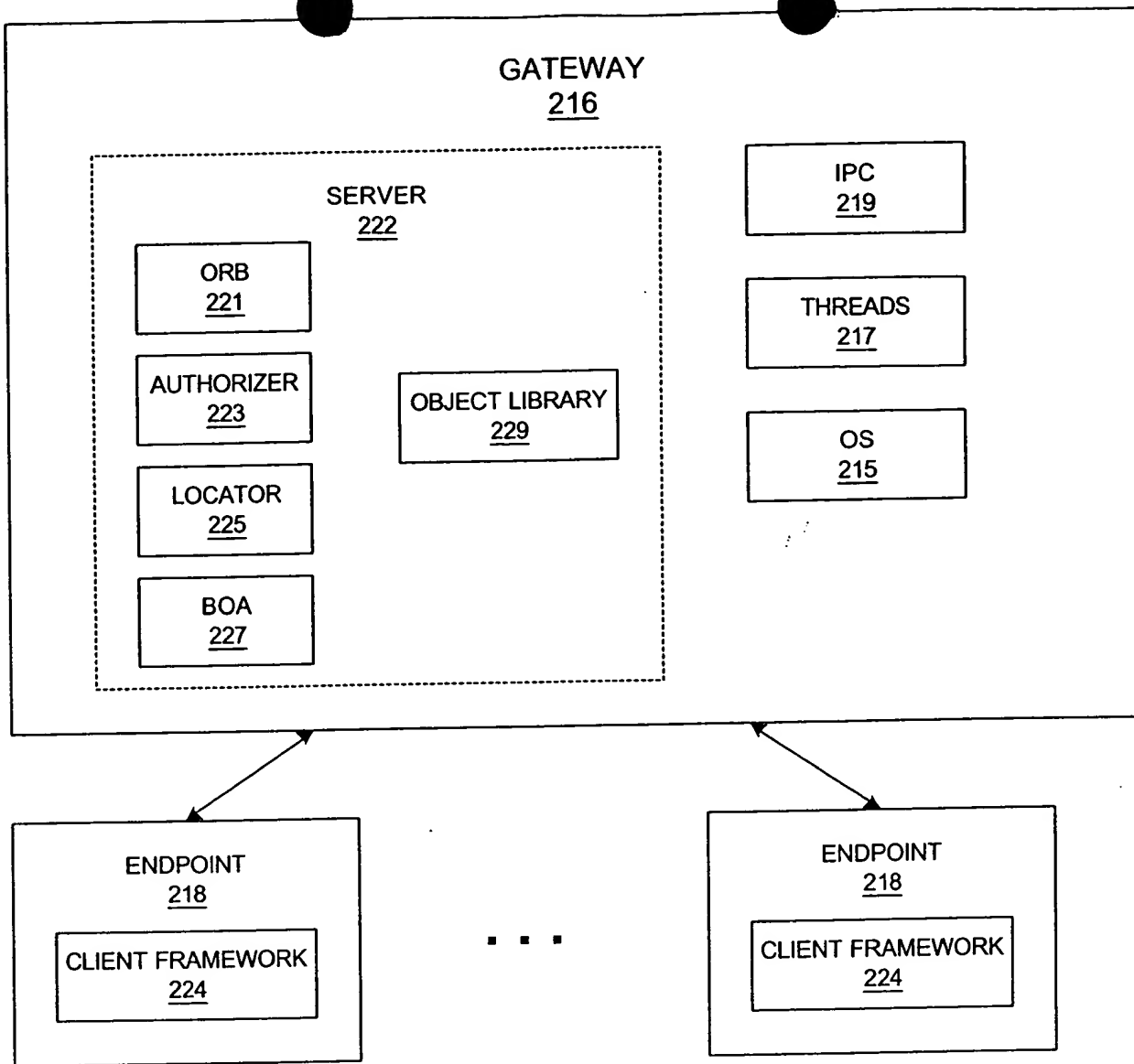


Figure 2B

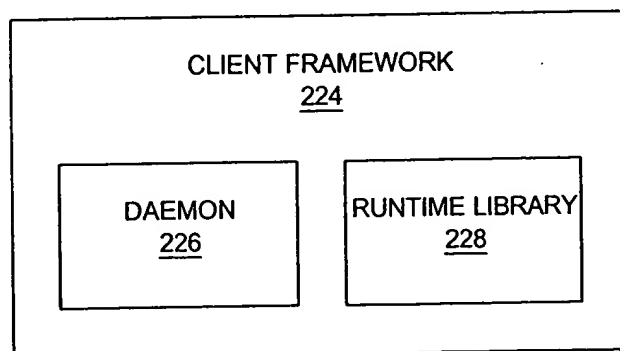


Figure 2C

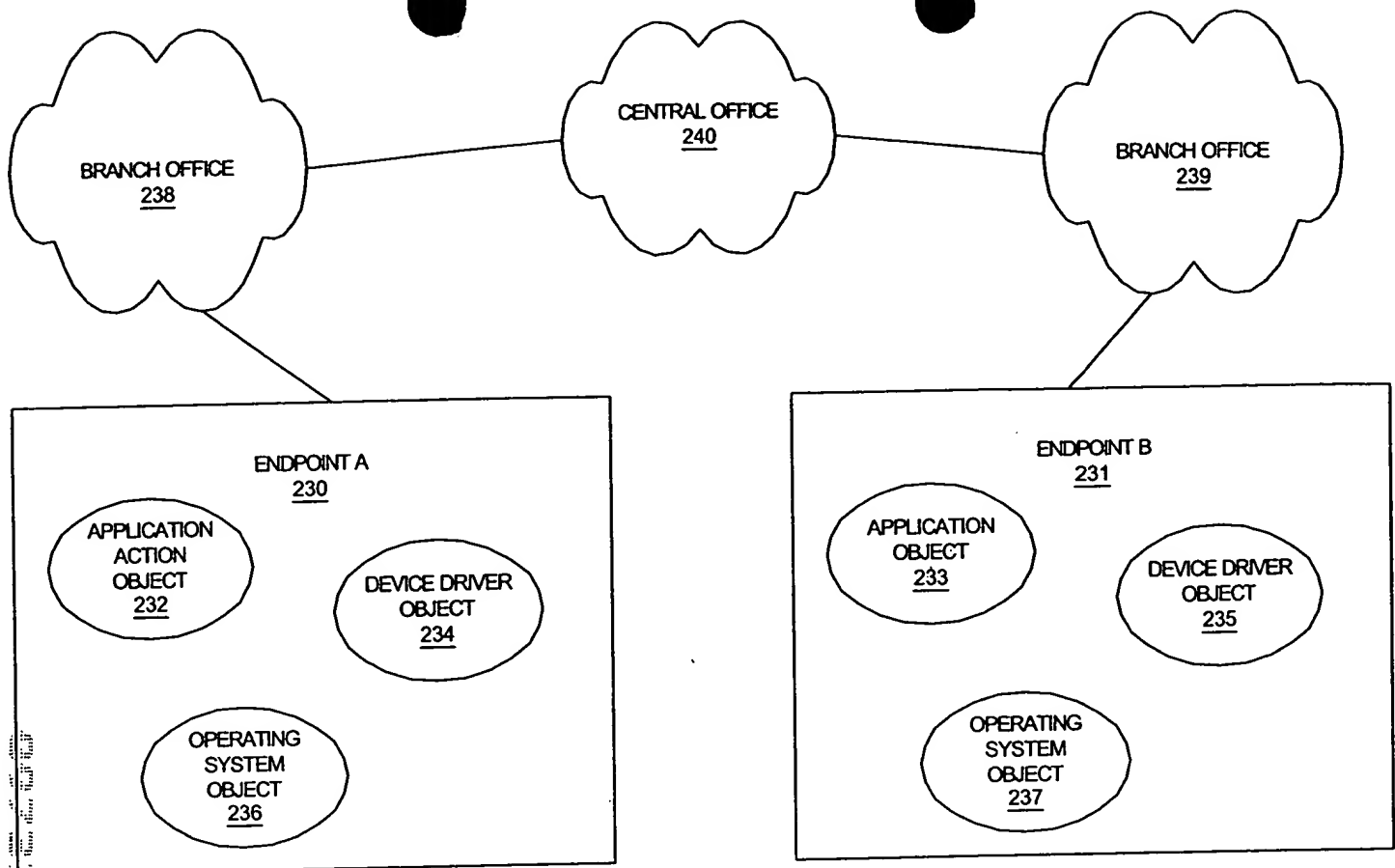


Figure 2D

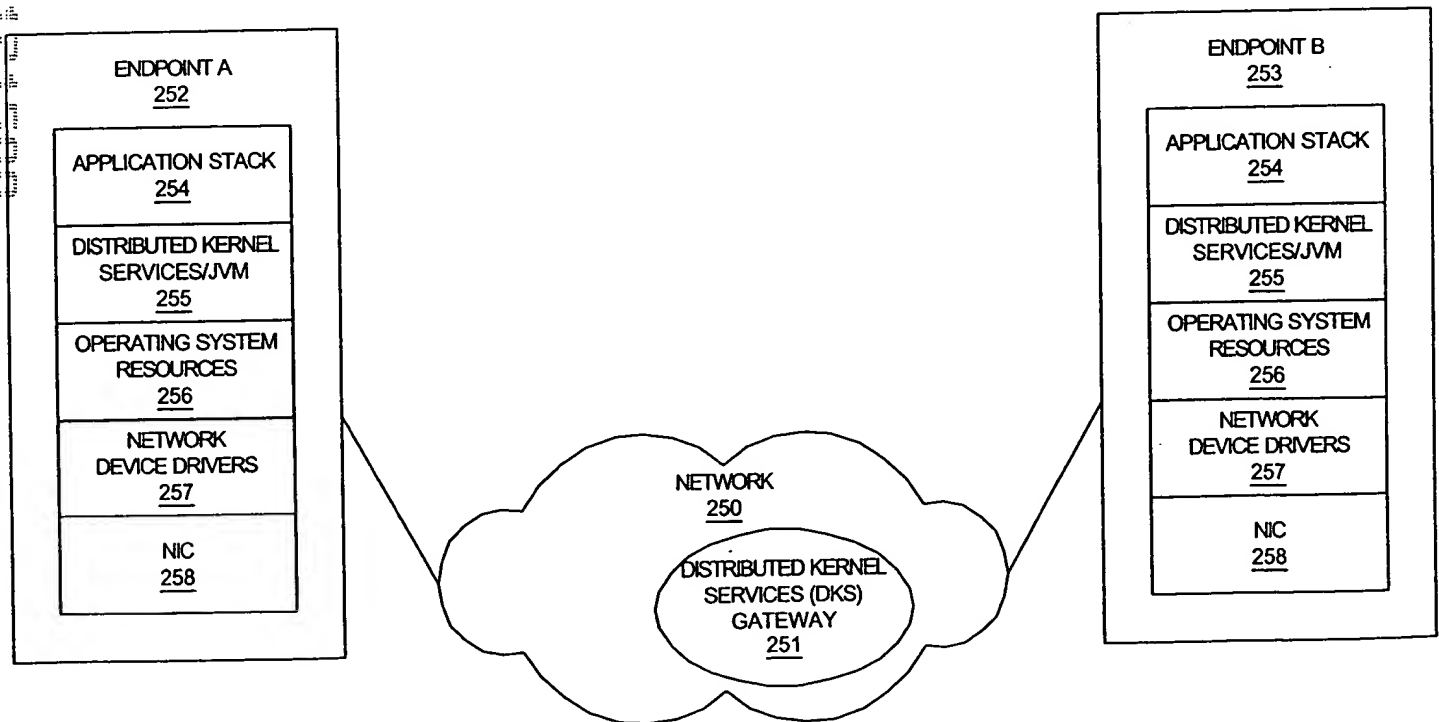


Figure 2E

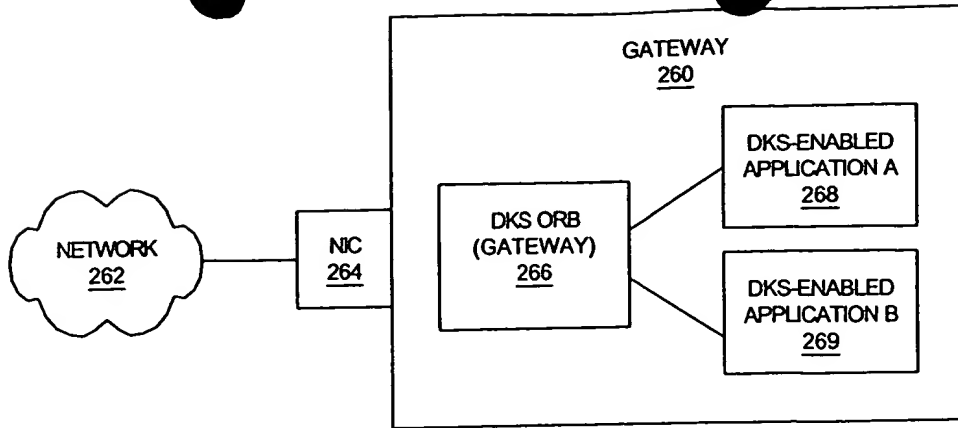


Figure 2F

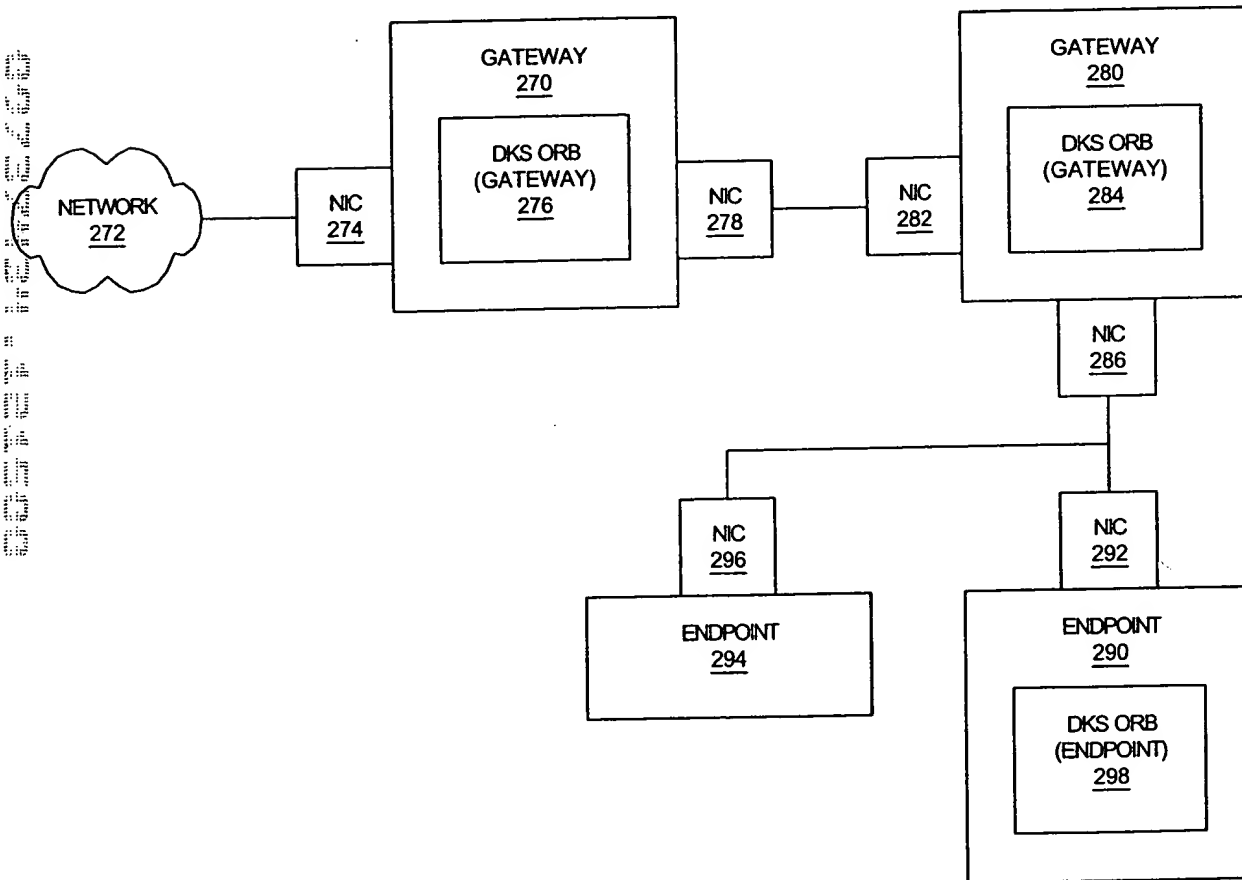


Figure 2G

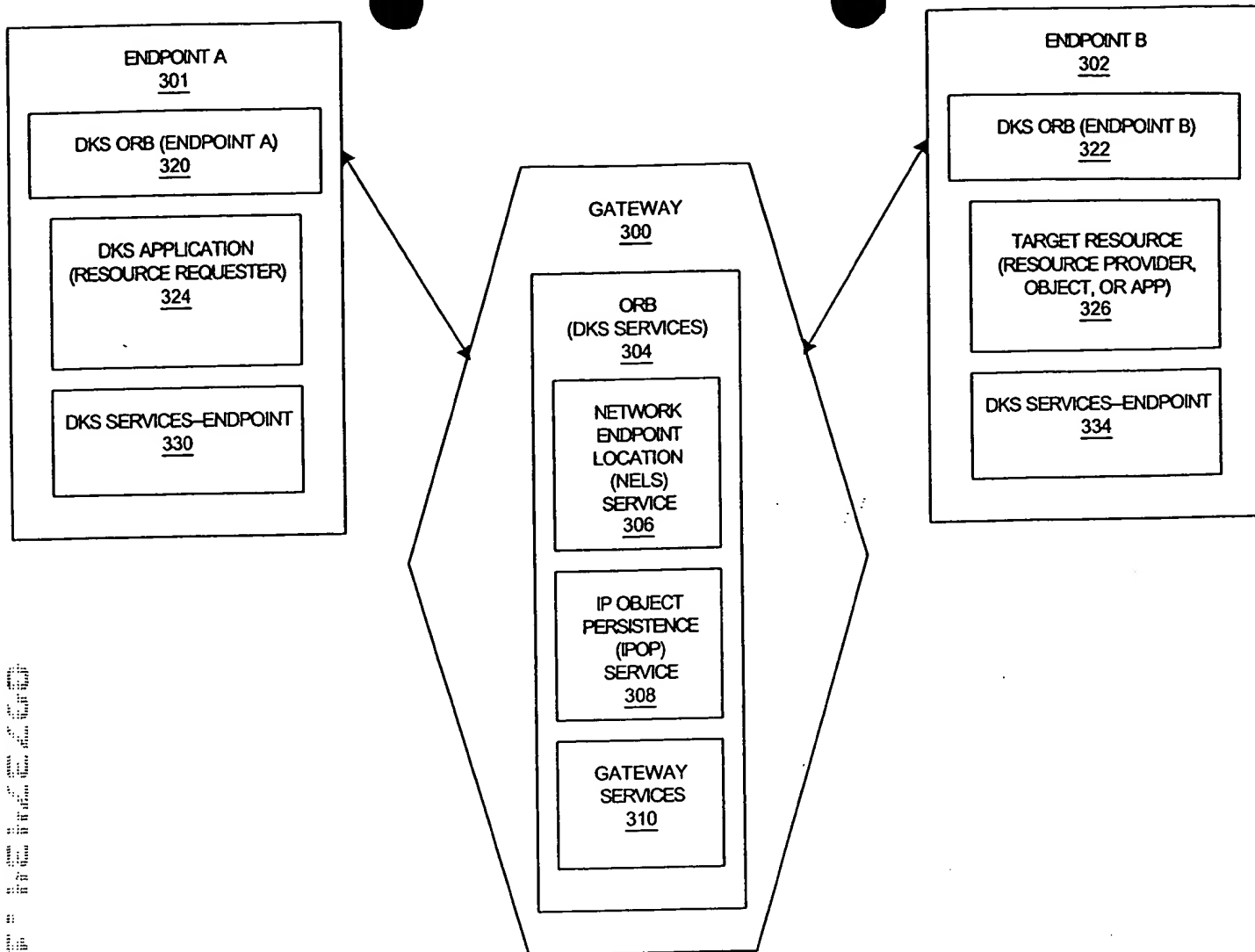


Figure 3

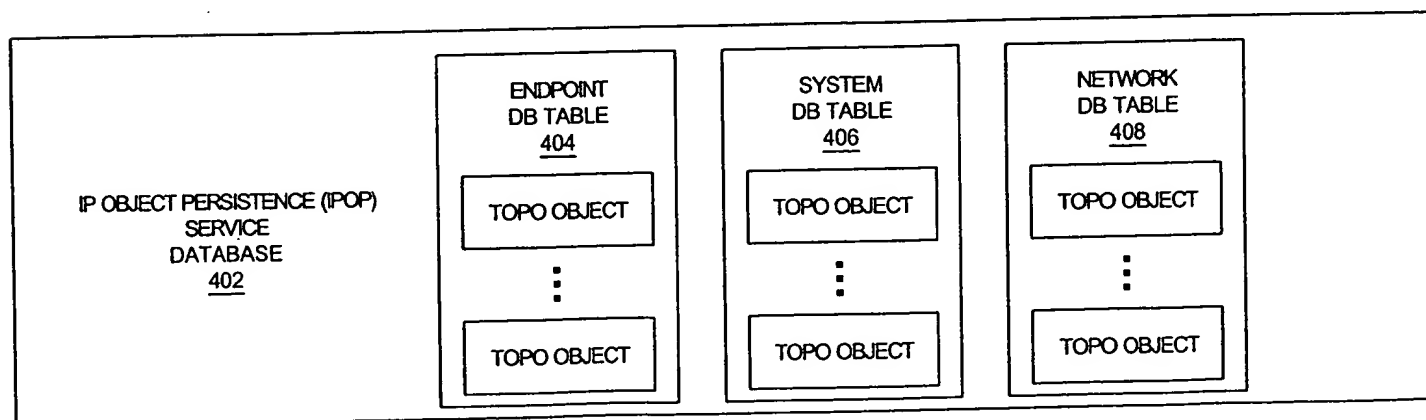


Figure 4

500 502 506 508 510 512 514 516 518 520 522 524 526 528

500

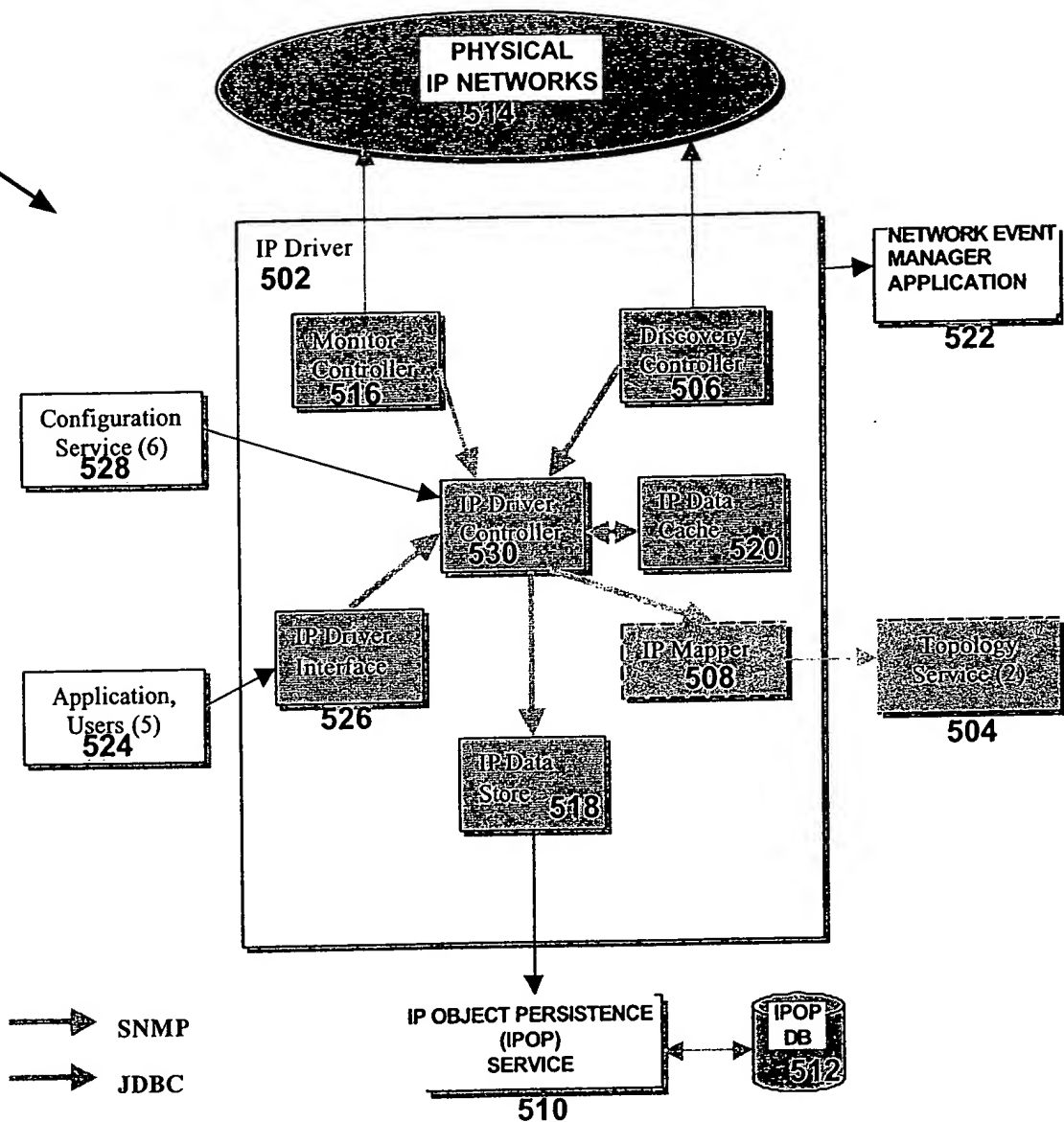


Figure 5A

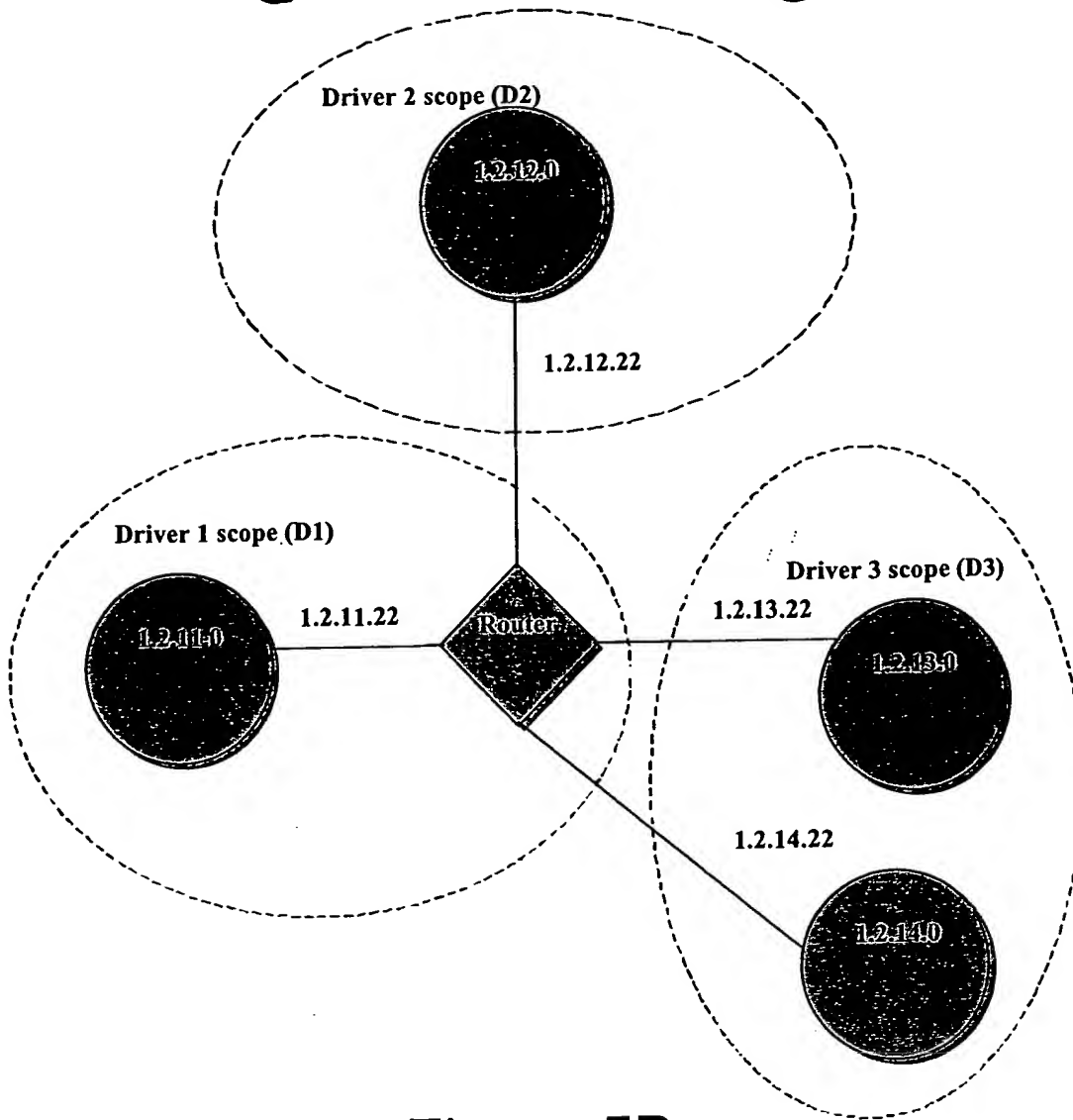


Figure 5B

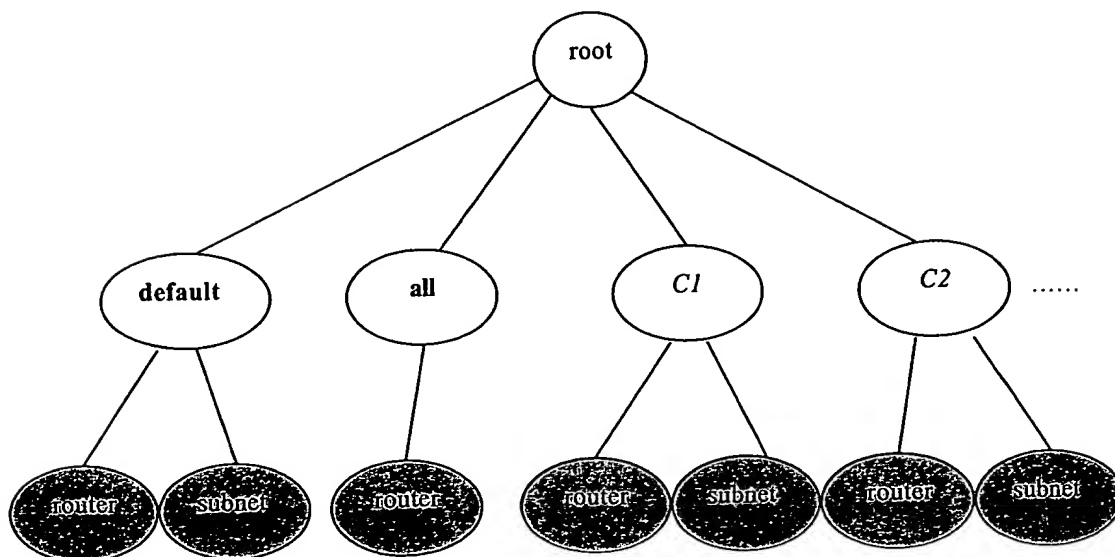


Figure 5C



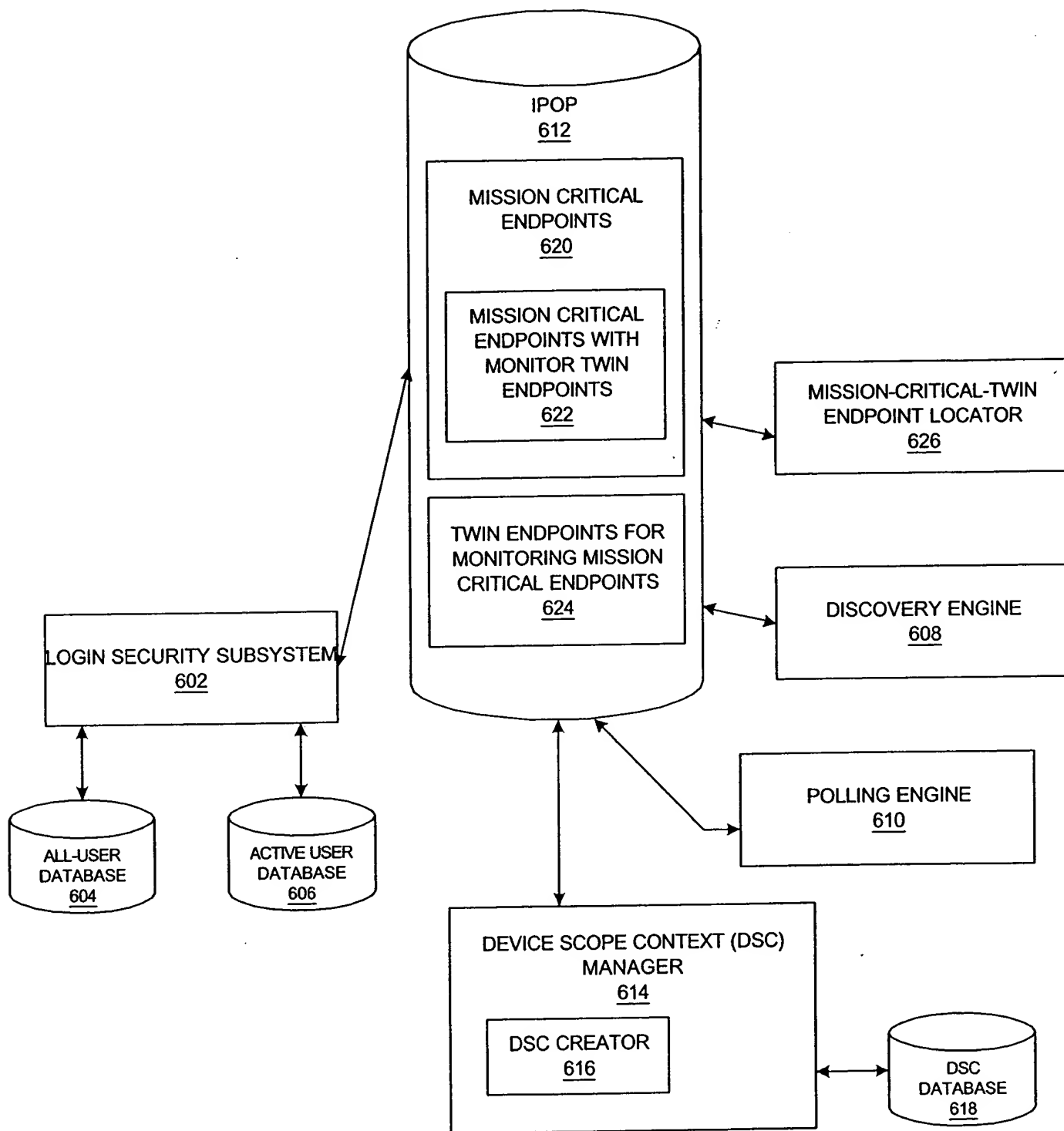


Figure 6

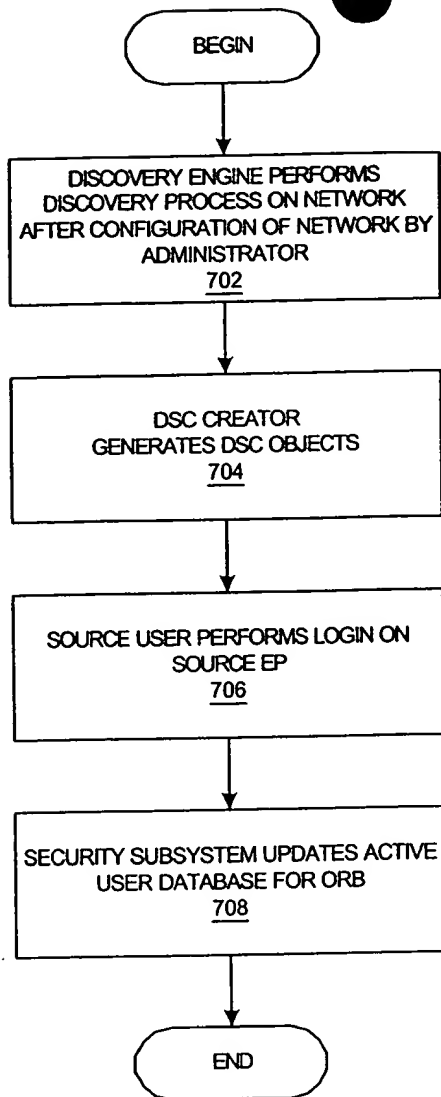


Figure 7A

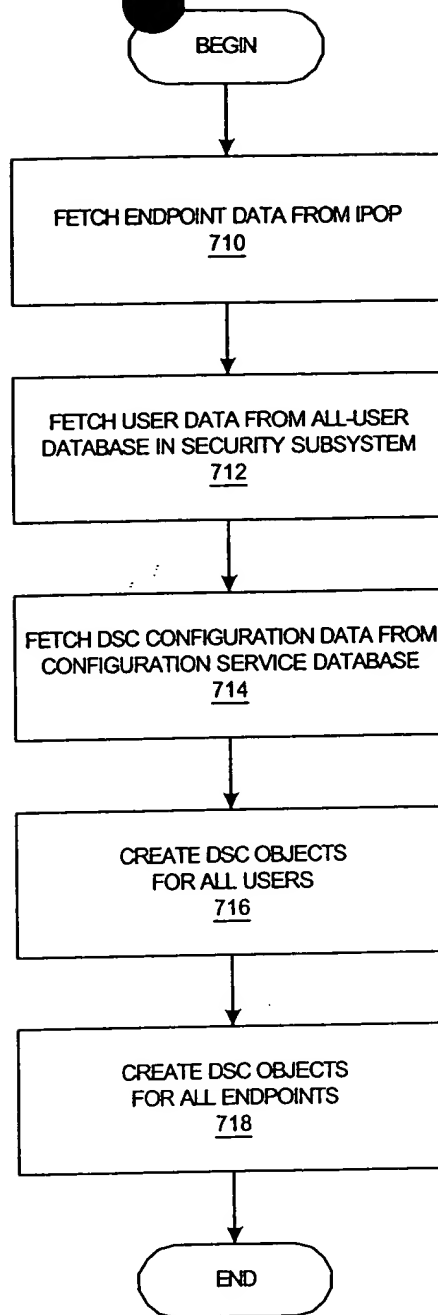


Figure 7B

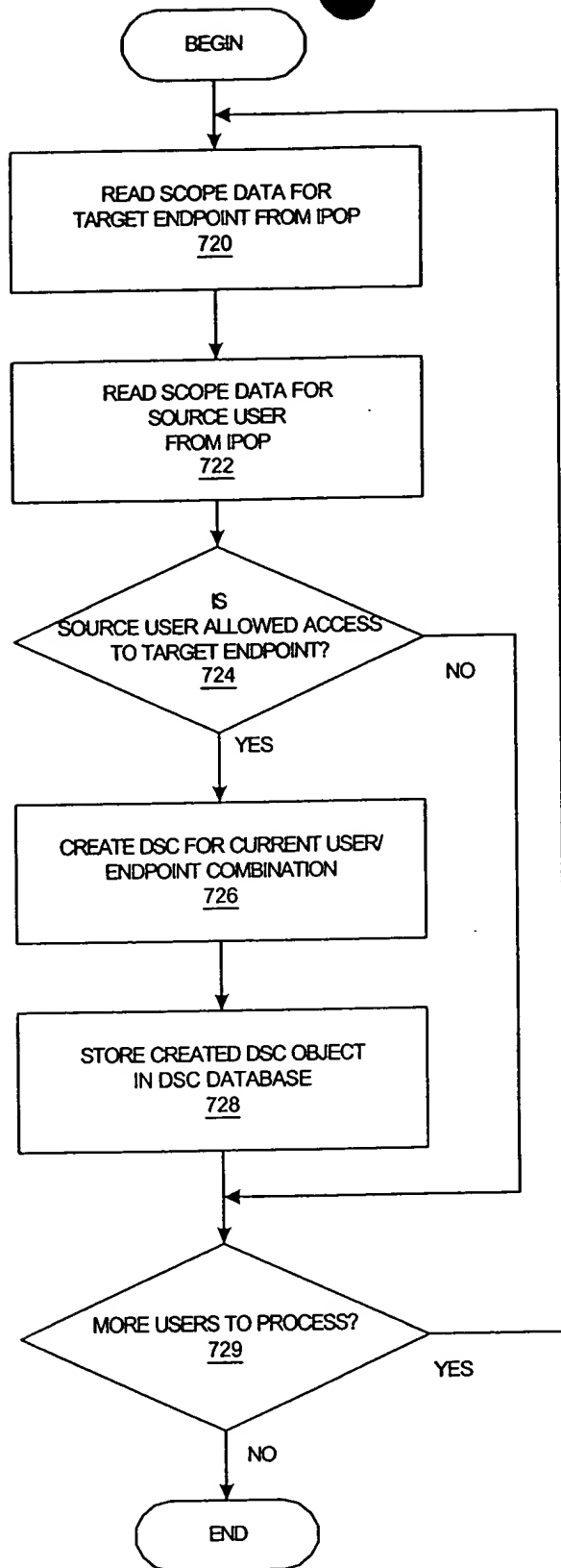


Figure 7C

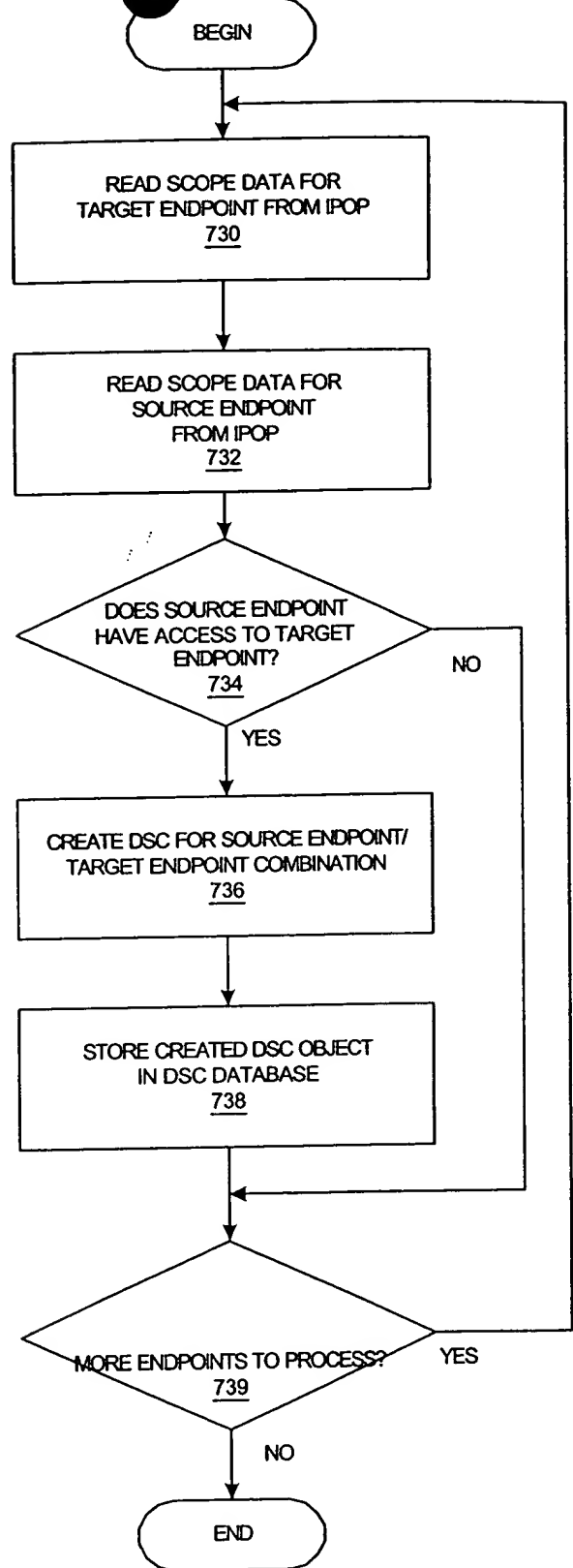


Figure 7D

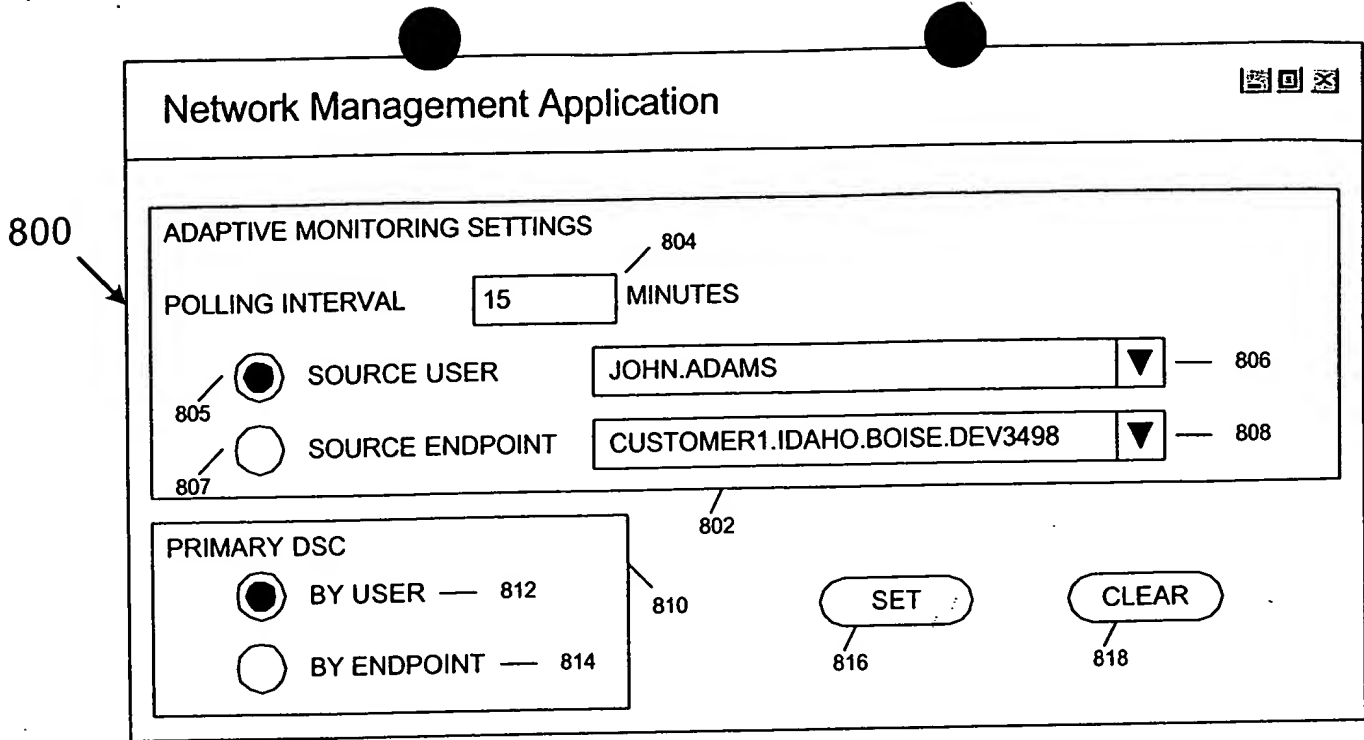


Figure 8A

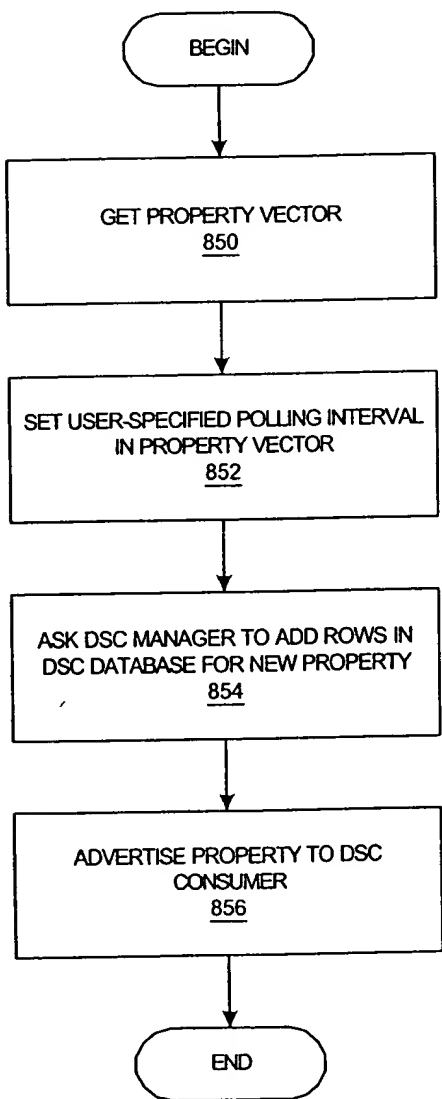


Figure 8C

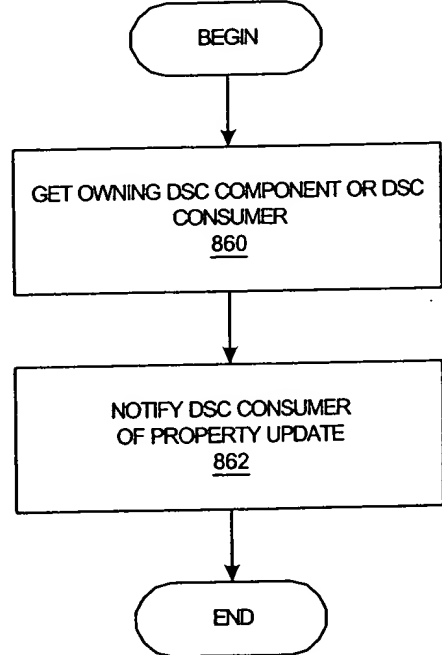


Figure 8D



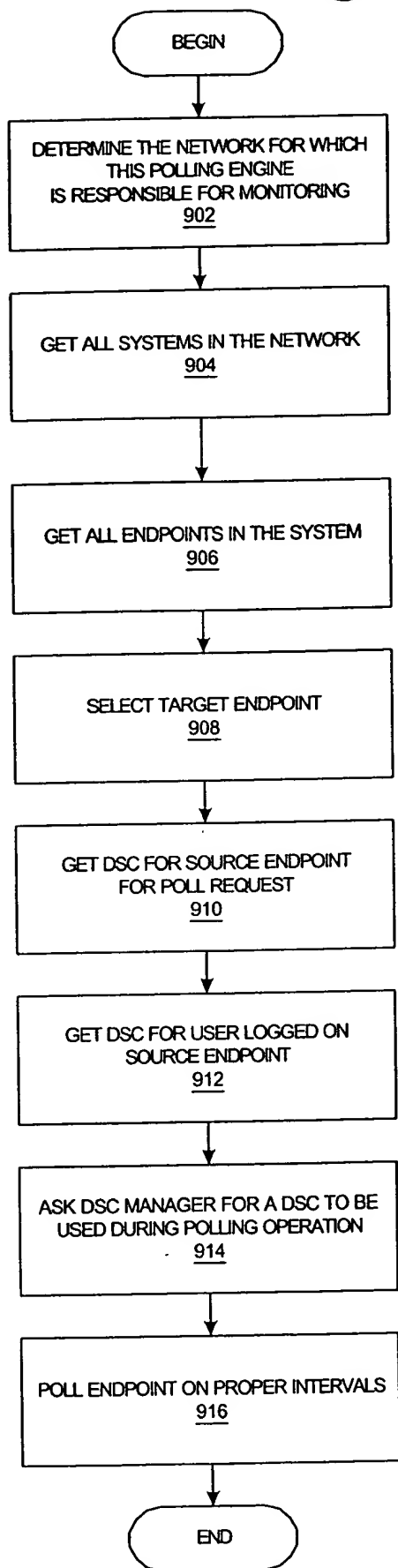


Figure 9A

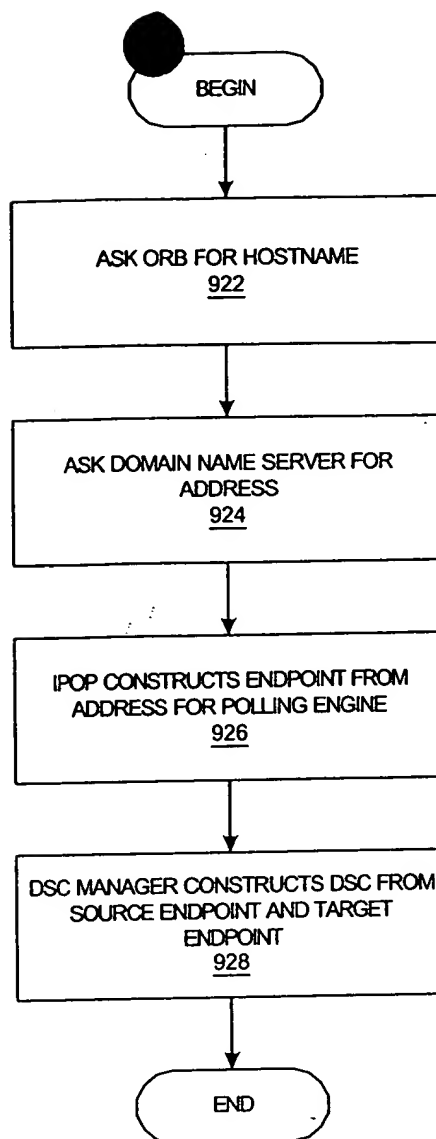


Figure 9B

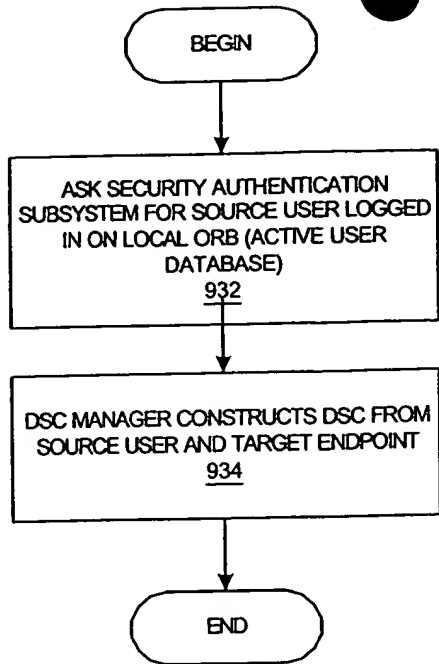


Figure 9C

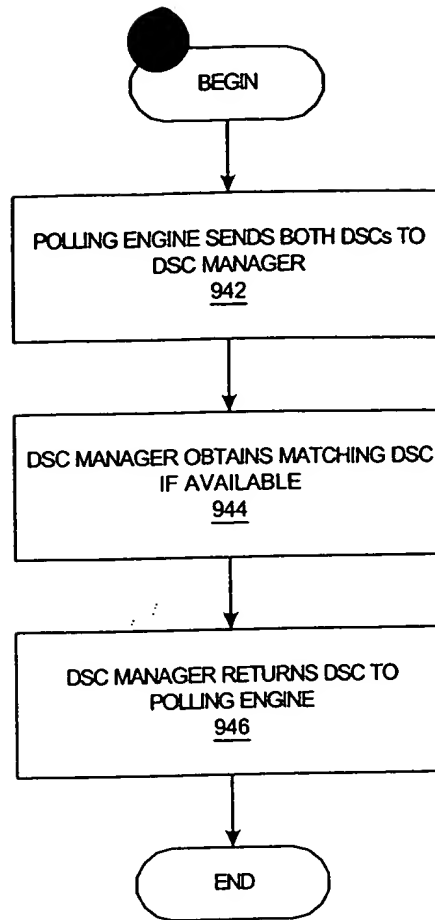


Figure 9D

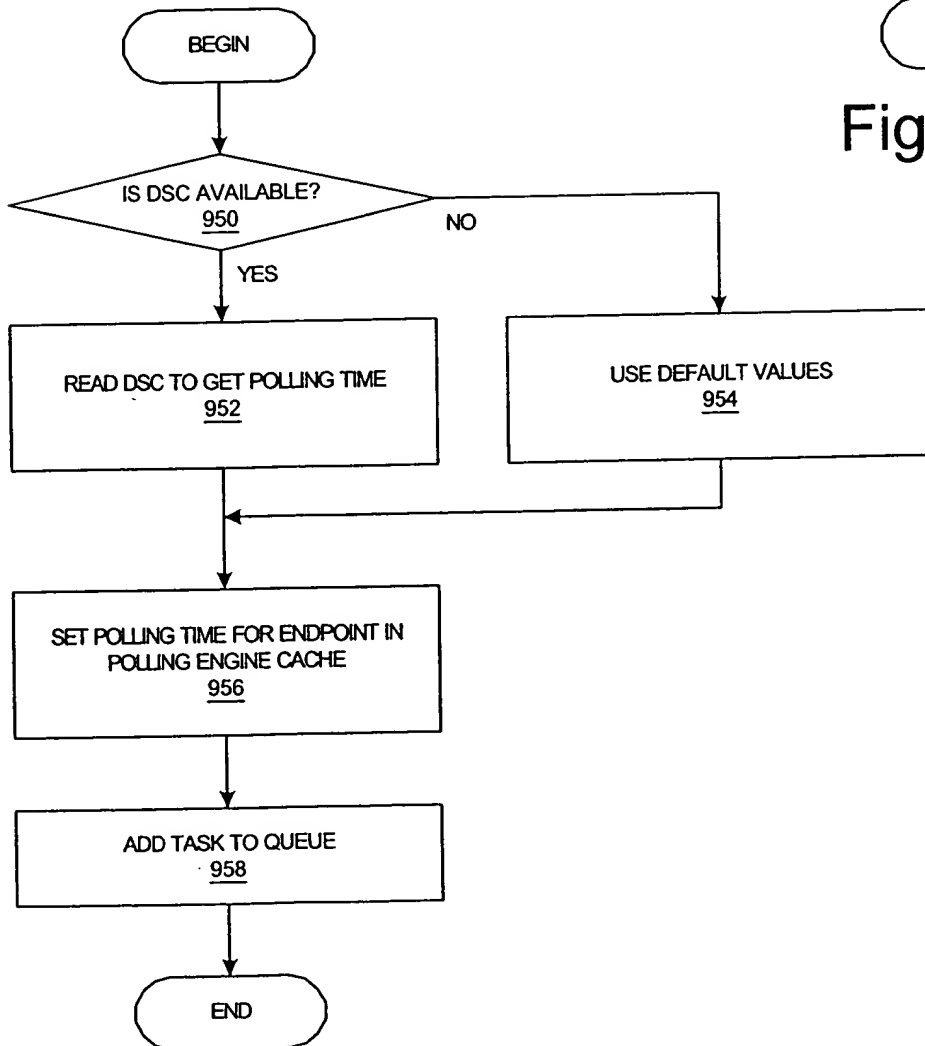


Figure 9E

Downloaded from https://www.dhs.gov/

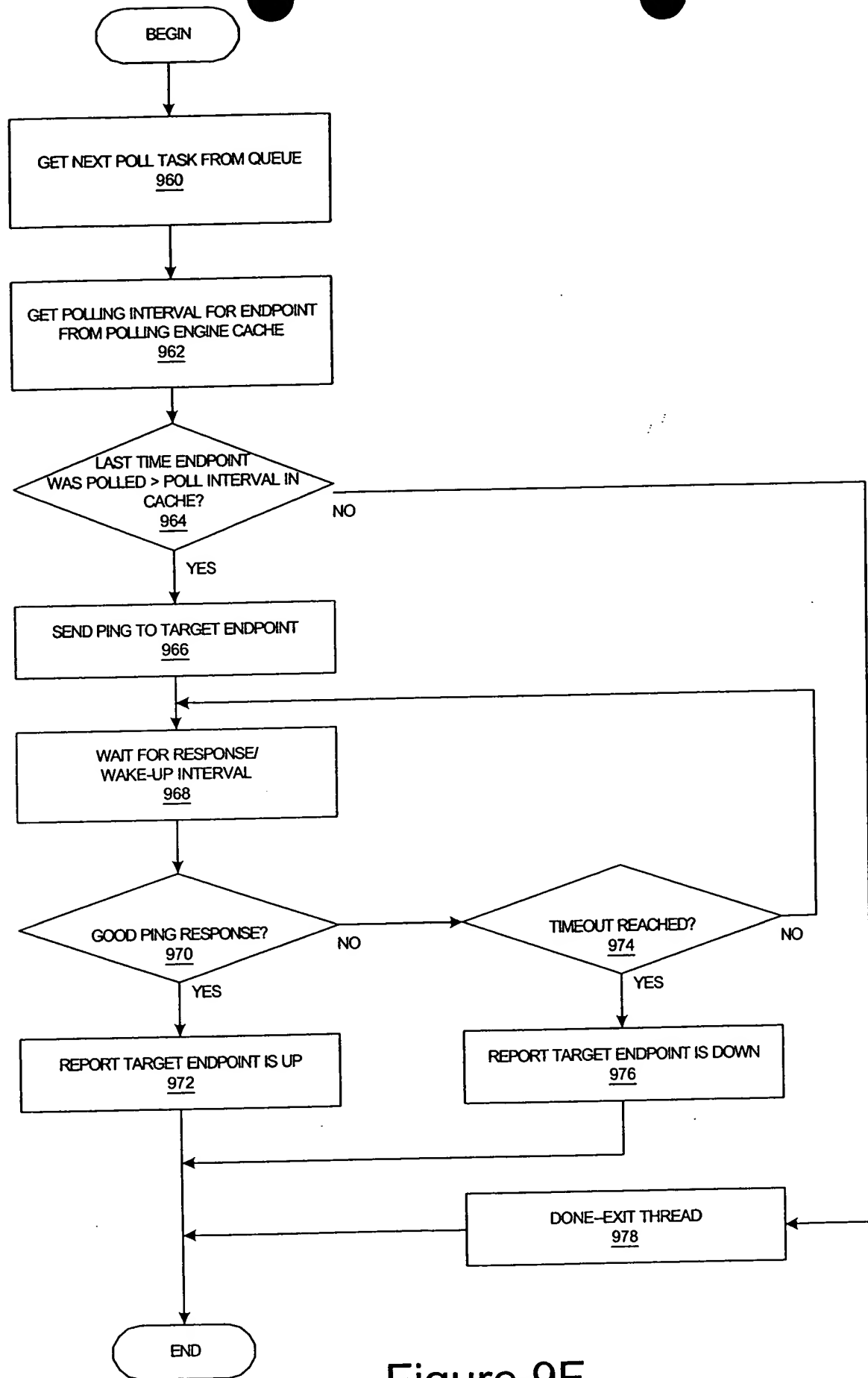


Figure 9F



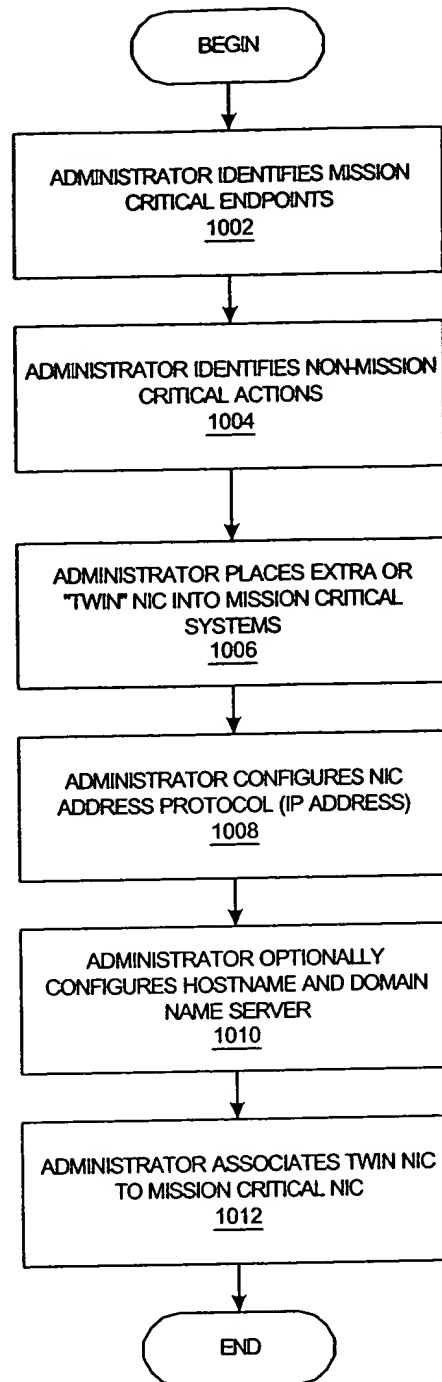


Figure 10A

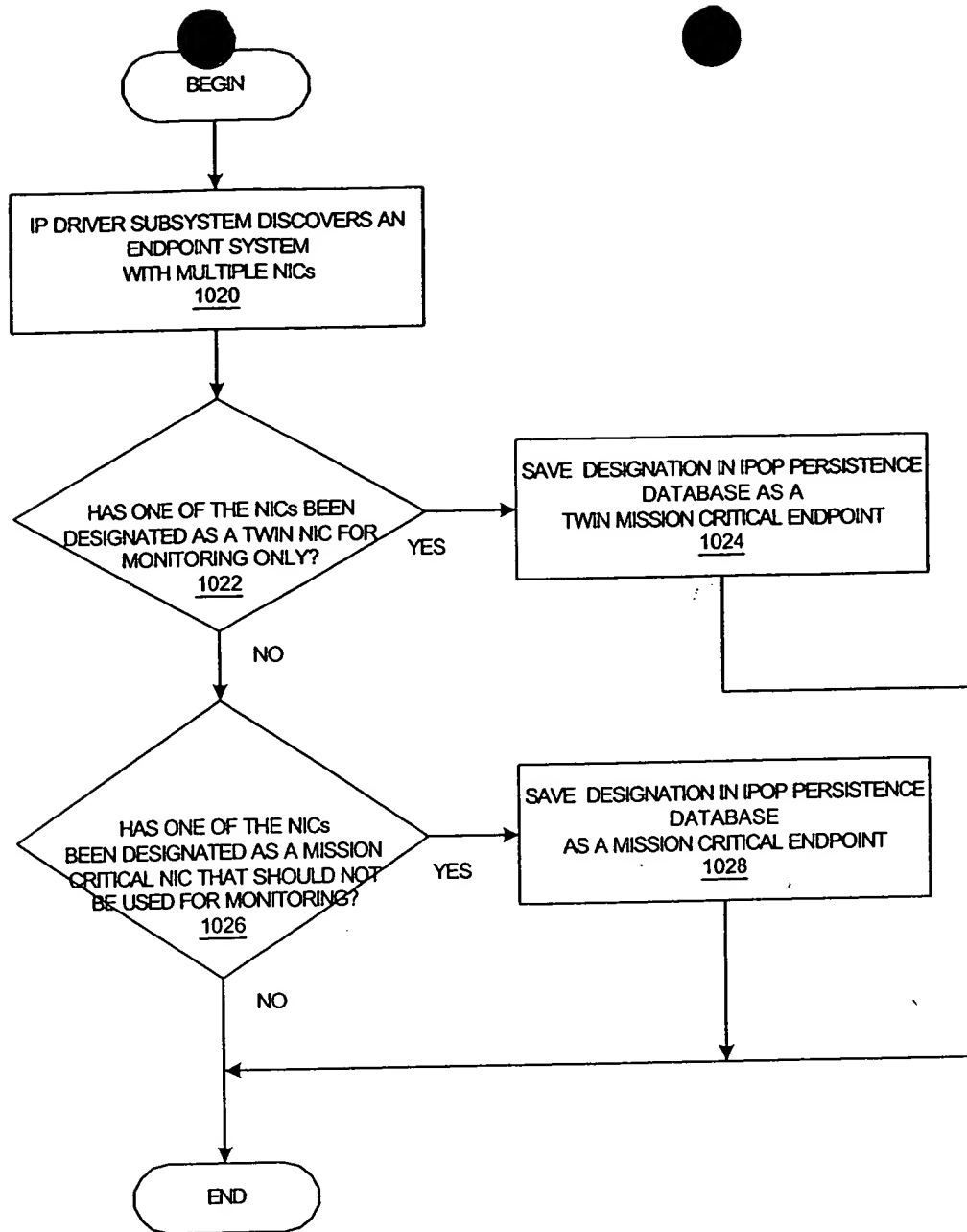


Figure 10B

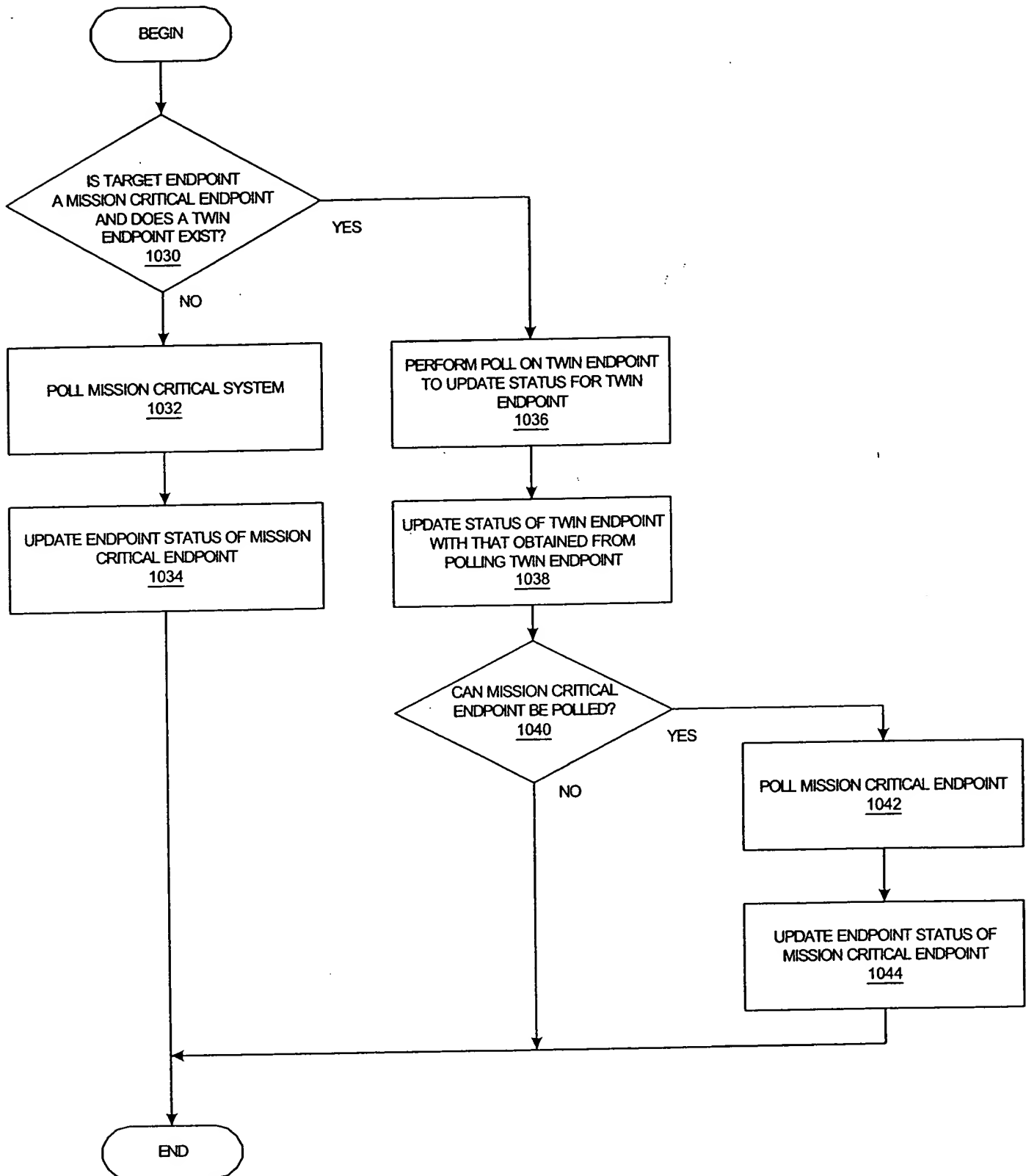


Figure 10C

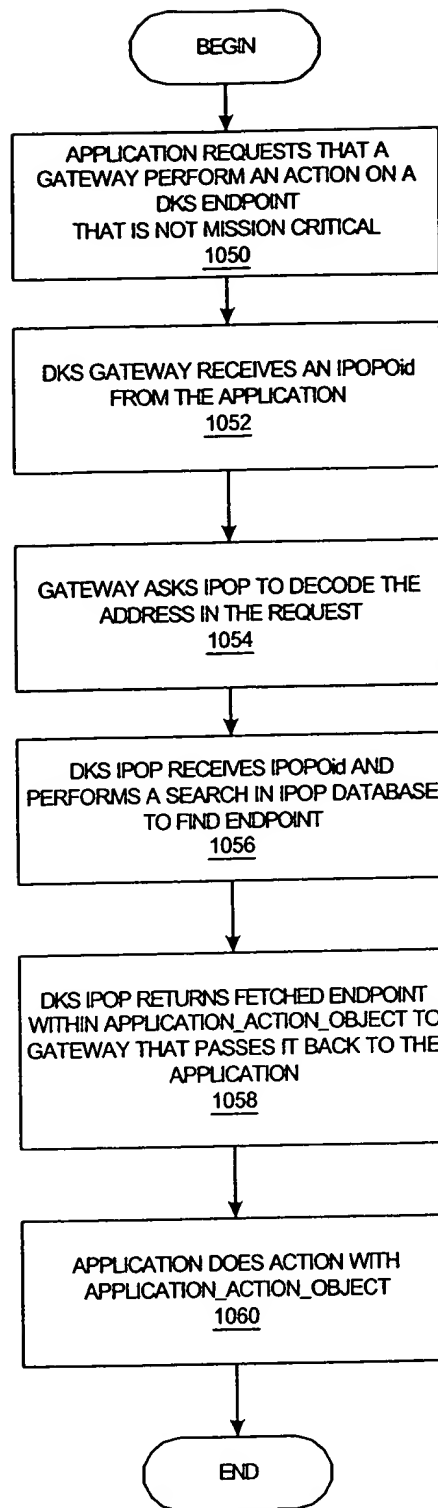


Figure 10D

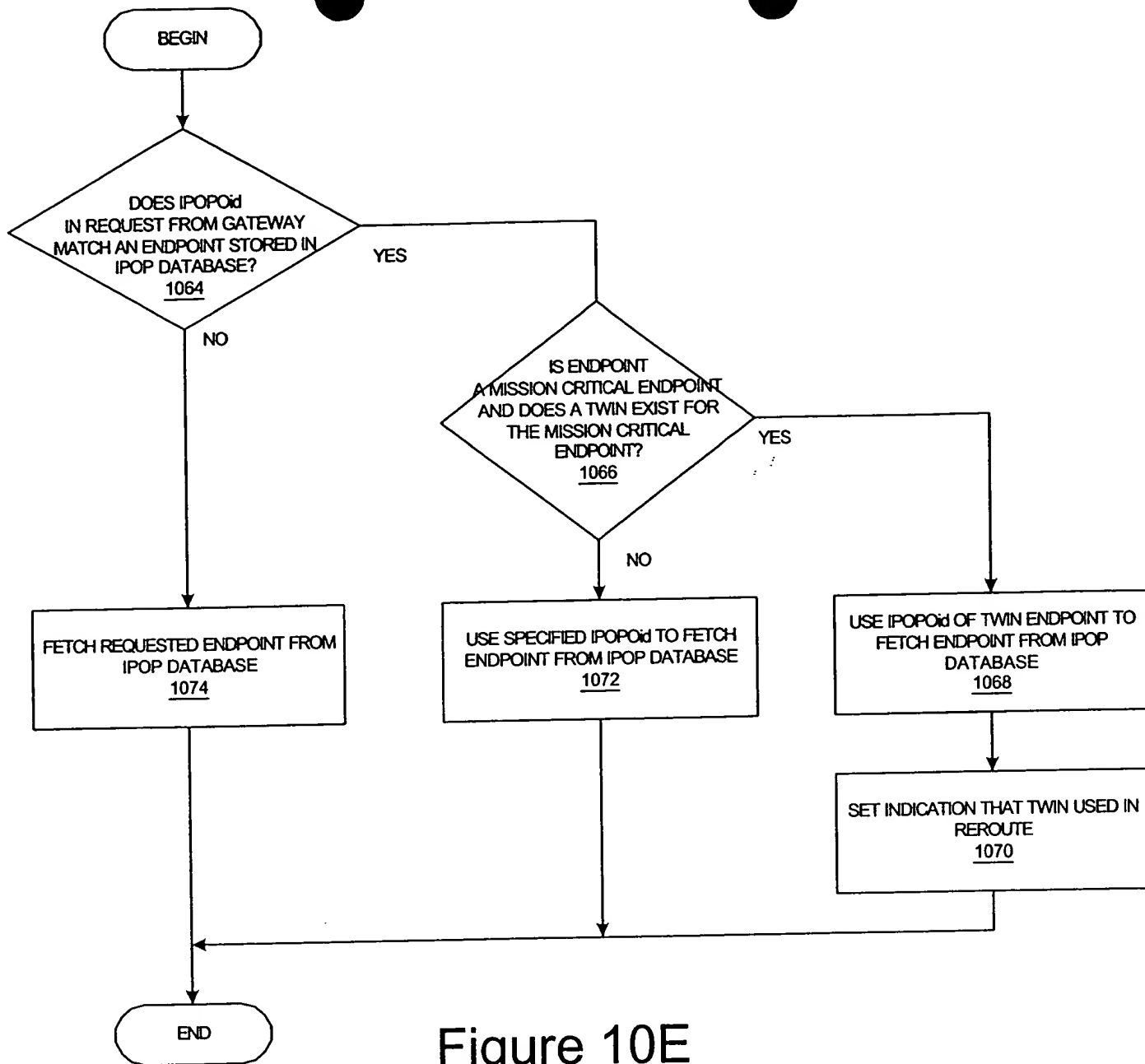


Figure 10E

The screenshot in Figure 10F shows a 'Network Management Application' window. Inside, there's a section titled 'MISSION CRITICAL TWIN ASSIGNMENT—MISSION CRITICAL ENDPOINT: 7.17.13.11'. Below this, it says 'ENDPOINT TO USE AS TWIN:'. There are two radio buttons: one for 'MAC ADDRESS' (labeled 1092) and one for 'VPN NUMBER' (labeled 1093). The 'VPN NUMBER' option is selected. To the right of these are input fields for 'MAC ADDRESS' (labeled 1093), 'VPN NUMBER' (labeled 1094), and 'IP ADDRESS' (labeled 1095). There are also 'SET' (labeled 1096) and 'CLEAR' (labeled 1097) buttons. A reference number 1090 points to the entire interface area, and 1091 points to the title bar area.

Figure 10F

```

CLASS ACTION_OBJECT {
    // CONSTRUCTOR
    ACTION_OBJECT( LONG IPADDRESS, SHORT VIRTUALPRIVATENETWORKADDRESS )
        THROWS BADADDRESS ...
    .
    .
    .
    VOID PERFORMACTION( ) // EXECUTES ACTION METHOD
    .
    .
    .
}

```

Figure 11A

```

CLASS APPLICATION_ACTION_OBJECT EXTENDS ACTION_OBJECT {
    boolean IsMissionCriticalAction; // TRUE = USED TO PERFORM ENTERPRISE-RELATED WORK
                                     // FALSE = USED TO PERFORM MONITORING OPERATIONS
                                     //      OR OTHER NON-REVENUE PRODUCING ACTION

    boolean TwinUsedinReroute // TRUE = IPOP HAS REPLACED REQUESTED ADDRESS WITH
                              //      AN ADDRESS THAT CAN BE USED FOR
                              //      NON-MISSION CRITICAL ACTION
    .
    .
    .
}

```

Figure 11B

Public Class Endpoint {

//public variables

long

InetAddress

long

EPObjectID; //ID to object (both private and public network addresses)

EPIPAddress; //physical network address (private or public)

EPVPN; //virtual private network ID

//get/set of variables

public long

getObjectID( ) { ... }

public InetAddress

getPAddress( ) { ... }

public long

getVPN( ) { ... }

}

## Figure 11C

Class TwinMissionCriticalEndpoint extends Endpoint {

.

.

.

IPOPOid

missionCriticalEndpoint; // Mission critical endpoint that is used to gather status

IPOPOid

missionCriticalSystem; // Mission critical system

long

endpointStatus;

long

twinEndpointStatus;

.

.

.

}

## Figure 11D

Class MissionCriticalEndpoint extends Endpoint {

.

.

.

boolean

useForMonitoring;

// TRUE = endpoint can be used for monitoring, polling,  
// and other system-management-type resources

.

.

.

}

## Figure 11E

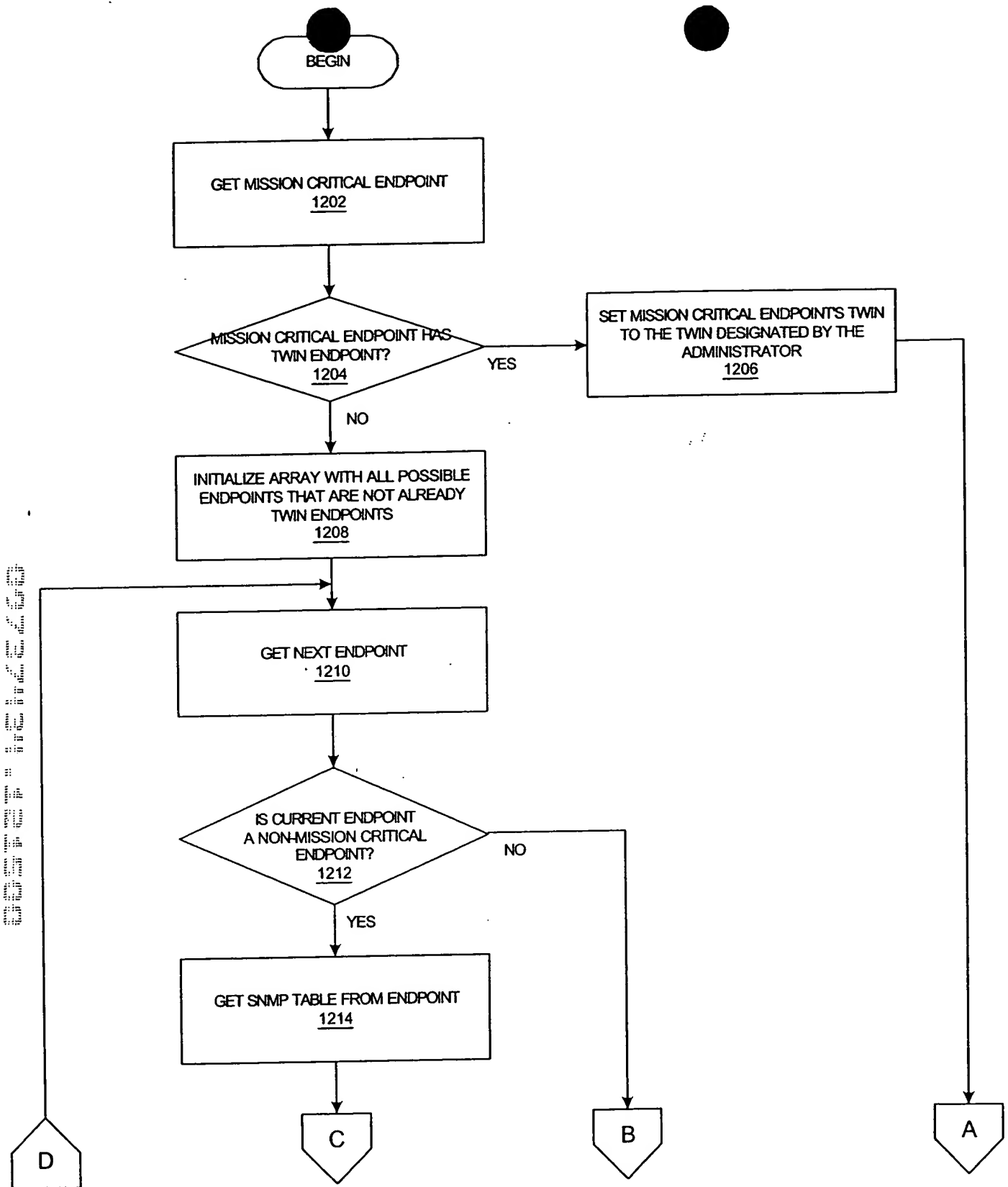


Figure 12A



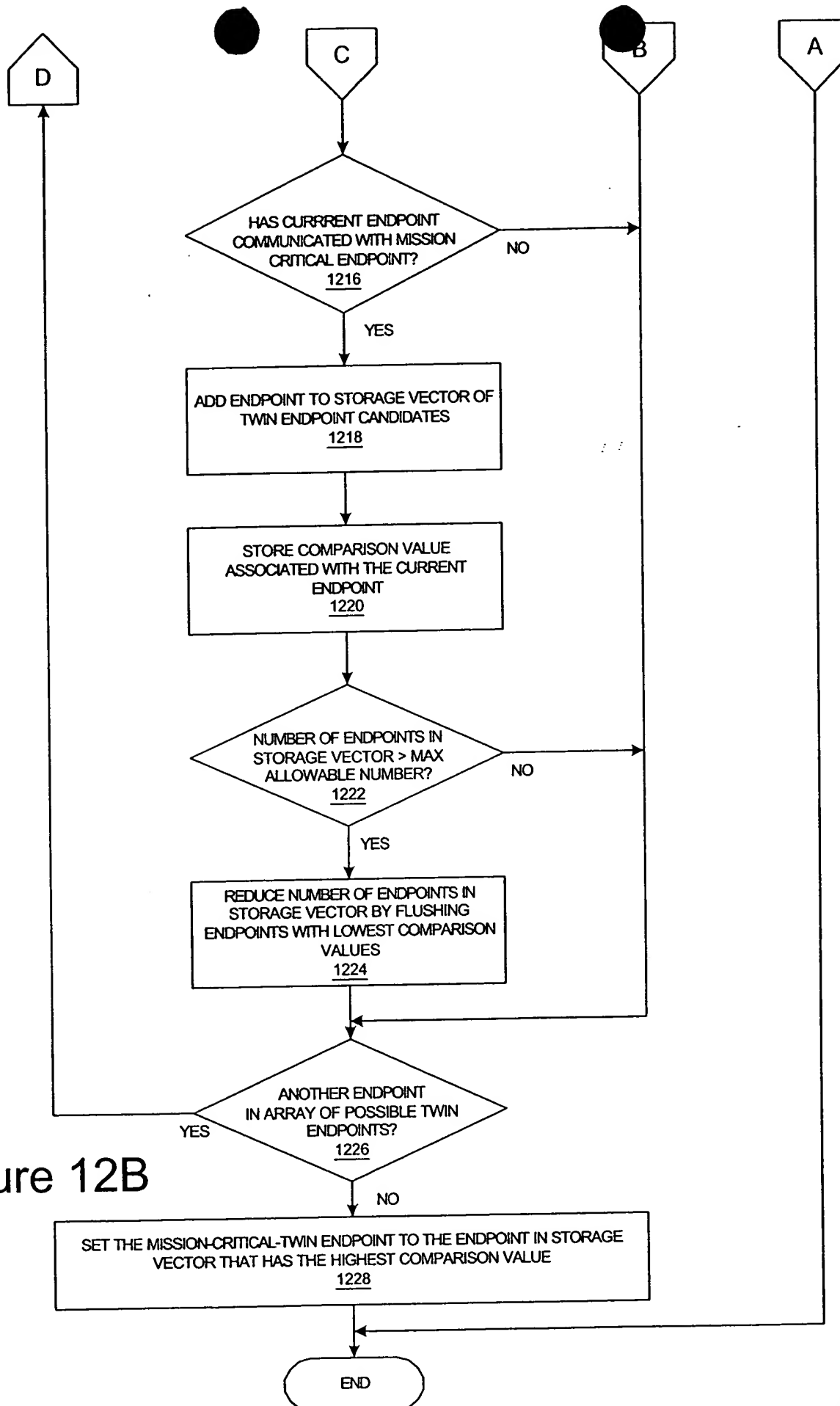


Figure 12B